

Amdt. dated August 19, 2004
Reply to Office action of April 19, 2004

Serial No. 09/579,866
Docket No. STL920000058US2
Firm No. 0054.0032

REMARKS/ARGUMENTS

The Examiner rejected claims 1, 3-7, 9-13, and 15-18 as obvious (35 U.S.C. §103) over Xu (U.S. Patent No. 6,324,581) in view of Schmuck (U.S. Patent No. 5,940,841). Applicants traverse for the following reasons.

Amended claims 1, 7, and 13 concern an extensible file access method for accessing a foreign file system from a local data processing system with a native file system, said foreign file system being located on a remote data processing system, said foreign file system having a set of foreign file attributes corresponding to each of a plurality of files in the foreign file system, and said native file system having a set of native file attributes corresponding to each of a plurality of files in the native file system. These claims require generating a request from a client on the local data processing system to the remote data processing system to open a foreign file in the foreign file system; opening of the foreign file by the foreign file system; sending of file attributes of the foreign file, hereinafter foreign file attributes, to the local data processing system; storing of the foreign file attributes by the local data processing system; determining a subset of the foreign file attributes which are equivalent to a corresponding subset of file attributes of the native file system, the subset of the foreign file attributes hereinafter known as conventional file attributes; and returning the conventional file attributes to the client.

Applicants amended these claims to move the last three limitations to dependent claims 19-21.

The Examiner cited FIG. 2, col. 8, lines 47-59 of Xu as teaching the claim requirement of determining a subset of the foreign file attributes which are equivalent to a corresponding subset of file attributes of the native file system, the subset of the foreign file attributes hereinafter known as conventional file attributes. (Fifth Office Action, pg. 4)

The cited col. 8 discusses how a data mover 41 may access a file in a file system it does not own. If data mover 41 receives a file access request from client 46, it determines whether it owns the file system to be accessed. If not, data mover 41 sends a metadata request to the data mover 42 that owns the file system to be accessed. Metadata refers to information about the data, and includes file access information and file attributes. In response to this metadata request, the data mover 42 owning the file system accesses file access information and file attributes and instead of reading or writing the data, the owning data mover places a lock on the file and returns

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metadata including pointers to the data in the file system to be accessed. Once data mover 41 receives the pointers to the data, it communicates the request to the file system and returns read data to the client. (Xu, Col. 8, line 57 to col. 9, line 20).

Nowhere does the above cited Xu anywhere teach or suggest determining a subset of foreign file attributes which are equivalent to a corresponding subset of file attributes of the native file system, where the subset comprises the conventional file attributes. Instead, the cited Xu discusses how a data mover may access data in a file system it does not own by requesting metadata, or information on a file in the file system. Although the data mover wanting to access the file would obtain metadata on the file, there is no teaching or suggestion in the cited Xu of determining a subset of foreign file attributes, i.e., in the file system not owned, which are equivalent to the corresponding subset of file attributes of the native file system. There is no mention in the cited Xu of comparing file attributes of one native and foreign file system as claimed.

Accordingly, the amended claims 1, 7, and 13 are patentable over the cited art because the cited art does not teach or suggest all the requirements of the claims.

Claims 3-6, 9-12, 15-18 and 19-21 are patentable over the cited art because they depend from one of claims 1, 7, and 13. Moreover, the following dependent claims provide additional grounds of patentability over the cited art for the reasons discussed below.

Claims 3, 9, and 15 were amended to depend from claims 19-21 and make minor clarifications. These claims additionally require accessing of the foreign file by the client via a protocol of the native file system, the accessing being performed in a similar manner to accessing a file in the native file system and accessing of the foreign file by the client by use of the extended file attributes, the accessing being performed via a protocol different from the native file system protocol.

Per the intervening claims 19-21 from which claims 3, 9, and 15 depend, the extended file attributes comprise a remaining subset of the foreign file attributes which are not equivalent to a corresponding subset of file attributes of the native file system.

The Examiner cited col. 27, lines 10-30 of Schmuck as teaching the claim requirements of accessing of the foreign file by the client by use of the extended file attributes, the accessing

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being performed via a protocol different from the native file system protocol. (Fifth Office Action, 5). Applicants traverse.

The cited col. 10 of Schmuck mentions that extended attributes allow associating variable length information with a file that can be accessed separately from the data stored in the file itself. The claimed extended file attributes are different and comprise a subset of the foreign file attributes which are not equivalent to a corresponding subset of file attributes of the native file system. Nowhere does the cited col. 10 teach or suggest that the extended attributes comprise a subset of the foreign file attributes which are not equivalent to a corresponding subset of file attributes of the native file system. Instead, the extended attributes of col. 10 are variable length information that may be accessed separately from data stored in the file, not foreign file attributes that are not equivalent to a corresponding subset of file attributes of the native file system as claimed.

Because the cited extended attributes of Schmuck are different than the claimed extended file attributes, the cited Schmuck does not teach or suggest the claim requirements of accessing a foreign file using the claimed extended file attributes.

Accordingly, claims 3, 9 and 15 provide additional grounds of patentability over the cited art because the additional requirements of these claims are not taught or suggested in the cited art.

Claims 6, 12, and 18 depend from claims 1, 7, and 13, respectively, and further require storing the extended file attributes in a shared memory portion of the local data processing system storage which is accessible by the client and other local data processing system processes; associating a unique handle with the extended file attributes; and providing the unique handle to a local data processing system process to enable the local data processing system process to access the extended file attributes.

Applicants submit that these claims provide further grounds of patentability over the cited art because they provide further operations concerning the extended file attributes, which is not shown in the cited art.

Accordingly, claims 6, 12 and 18 provide additional grounds of patentability over the cited art because the additional requirements of these claims are not taught or suggested in the cited art.

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Added claims 19, 20, and 21 depend from claims 1, 7, and 13 and further require storing a remaining subset of the foreign file attributes which are not equivalent to a corresponding subset of file attributes of the native file system, the remaining subset of the foreign file attributes hereinafter known as extended file attributes; accessing of the foreign file attributes stored in the local data processing system by the local data processing system client to process the foreign file; and processing by the local data processing system client the foreign file using the stored foreign file attributes.

In rejecting claims 1, 7, and 13, the Examiner cited col. 10, lines 43-53 of Schmuck as teaching the requirement of storing a remaining subset of the foreign file attributes which are not equivalent to a corresponding subset of file attributes of the native file system, the remaining subset of the foreign file attributes hereinafter known as extended file attributes. (Fifth Office Action, pg. 4). This requirement is now in new claims 19, 20, and 21.

The cited col. 10 of Schmuck discusses that when a new record is added to a hash bucket hash tree level is stored with the record. When the hash bucket is split, the tree level stored in the bucket header is incremented. The hash tree levels associated with a particular record are compared with the hash tree level stored in the hash bucket header to determine whether the record was inserted before or after the bucket was split. Nowhere does the cited col. 10 of Schmuck anywhere teach or suggest the claim requirement of storing a remaining subset of the foreign file attributes which are not equivalent to a corresponding subset of file attributes of the native file system, the remaining subset of the foreign file attributes hereinafter known as extended file attributes. Further, as discussed above, the cited col. 27 of Schmuck discussing extended attributes also does not teach or suggest determining whether foreign file attributes are not equivalent to corresponding native file system attributes and then storing the remaining subset of non-equivalent file attributes, known as the extended file attributes.

Accordingly, claims 19, 20, and 21 provide additional grounds of patentability over the cite art because the additional requirements of these claims are not taught or suggested in the cited art.

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Conclusion

For all the above reasons, Applicant submits that the pending claims 1, 3-7, 8-13, and 15-21 are patentable over the art of record. Applicants submit herewith the fee for a petition for a one month extension of time. Nonetheless, should any additional fees be required, please charge Deposit Account No. 09-0460.

The attorney of record invites the Examiner to contact him at (310) 553-7977 if the Examiner believes such contact would advance the prosecution of the case.

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